

NA Data Center Cooling - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The NA Data Center Cooling Market size is estimated at USD 15.64 billion in 2024, and is expected to reach USD 26.67 billion by 2029, growing at a CAGR of 11.26% during the forecast period (2024-2029).

The rapid development of various containerized, modular, and performance-optimized data center (POD) facilities is anticipated to boost the overall demand for various cooling systems that can be utilized in the data centers, driving the market's growth extensively.

Key Highlights

-The United States dominated the total North American data center cooling market mainly due to the growth in the development of colocation and hyperscale facilities with over 100 MW power capacity. A surge in the need for cost-effective and efficient data centers, healthy growth of enterprises with data centers, various green initiatives for eco-friendly data center solutions, and power density are expected to drive the market's growth.

-In addition, the emergence of portable cooling and liquid-based cooling technologies and growth in the need for a modular data center cooling approach is expected to offer lucrative opportunities for the North American data center cooling market. The solution segment had ruled the North American data center cooling market primarily due to the rising adoption of energy-efficient, cost-effective, and environment-friendly cooling solutions in line with various stringent environmental safety rules offered by governmental bodies.

-Moreover, the market witnessed significant product launches and innovations, driving the market significantly. For instance, in June 2023, a 5MW, state-of-the-art testing laboratory was commissioned at the Modine Rockbridge facility in Virginia, further expanding the services that Airedale by Modine can provide data center customers and meet growing demand from the data center industry for validated, sustainable cooling solutions. The new lab can test a complete range of air conditioning equipment,

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accommodating air-cooled chillers up to 2.1MW and water-cooled chillers up to 5MW.

-However, the need for specialized infrastructure, higher investment costs, and various cooling challenges during a power outage is expected to restrict the growth of the North American data center cooling market throughout the forecast period.

-The COVID-19 pandemic placed data centers in uncharted territory. There were many supply chain disruptions, and due to lockdowns globally, the smooth operations of the systems were hugely impacted. Owing to shipping disruptions and factory closures that affected the delivery of data center equipment, operators found workarounds to meet the challenges. However, during the post-COVID-19 period, the market is expected to witness various lucrative growth opportunities throughout the forecast period.

NA Data Center Cooling Market Trends

Information Technology Industry to Witness Highest Growth

- The information technology (IT) industry primarily consists of the overall sales of information technology (IT) services and related goods by various entities such as sole traders, organizations, and partnerships that mainly apply computers, computer peripherals, and telecommunications equipment to retrieve, store, transmit and maneuver data. The IT market also involves computer networking, systems design services, broadcasting, information distribution technologies like telephones and television, and several other equipments used during the process. These huge needs requirements need a proper cooling system for the devices to perform normally, thereby driving the overall demand for the data center cooling market.

- The IT industry needs on-premise private data storage as well as hyperscale data centers for its various operations according to the organization's size. Moreover, the rise in the adoption of cloud storage has drastically increased over the years within the region, especially due to growth in SaaS providers, allowing cloud storage providers to extend their capacities, which is anticipated to maximize the demand for data center cooling systems.

- The cooling system is essential in the IT and data center sector, primarily due to the need for various enhanced high-quality cooling solutions that are quite efficient than the traditional air-cooling solution. Also, the rise in technological innovation in the IT infrastructure, coupled with the increase in the demand for cooling systems among the various smartphone manufacturers for thermal management, is also driving the market growth extensively.

- Moreover, The United States plays a very significant role in terms of establishing various driving the market's growth rate. It is mainly due to the rising investments and establishments of the data center by the key major market players within the region. For instance, in January 2023, Amazon Web Services intends to invest a sum of around USD 35 billion by 2040 to establish various multiple data center campuses across Virginia.

United States is Anticipated to Hold Significant Market Share

- The United States is poised to dominate the market in North America, owing to the presence of many services and software providers as well as high investments by colocation providers and hyper-scale data center operators. In the last few years, there has been a significant rise in the number of data centers. A considerable number of processors are being utilized in a given space to increase data centers' performance, which results in increased density. The requirement for power and cooling has grown along with increased density.

- The United States also contributes substantially to the global data center requirements from the banking, IT, financial services, and insurance (BFSI), retail, and healthcare industries. In addition, data center service providers in the region are prompted to manage their operating costs, as the region is a lucrative market, considering the number of data centers and their expansions.

- Furthermore, data centers' power density experiences growth by an average of 1.5 kW per rack, which results in limited air

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distribution and enhanced heat generation. In general, IT equipment typically needs between 100 and 160 cfm of air per kW, but in a dense environment, it diminishes to less than 100, which results in higher heat generation, driving the market's growth significantly.

- Also, the expansion of mobile broadband, the emergence of 5G, growth in big data analytics, and cloud computing are the primary factors driving the demand for new data center infrastructures in the United States. Network providers are working to ensure the implementation of 5G at a rapid pace for better innovation. Such developments are further driving the demand for efficient data center cooling solutions and services among United States's enterprises.

- As per Cloudscene, as of September 2023, the total count of data centers in the United States was 5,375, whereas Germany ranked second with an overall count of 522 data centers. The United Kingdom ranked 3rd among countries in terms of the total number of data centers, with 517, while China recorded 448. This possession of a significant number of data centers in the United States is expected to amplify the market's growth throughout the forecast period.

NA Data Center Cooling Industry Overview

The North American data center cooling market is highly competitive and fragmented. Market penetration is growing with a strong presence of major players, such as Schneider Electric SE, Black Box Corporation, Asetek, Nortek Air Solutions LLC, Emerson Electric Co., Hitachi Ltd, Rittal GmbH & Co. KG, Fujitsu Ltd, Stulz GmbH, and Vertiv, in established markets. With the increasing focus on innovation, the demand for new technologies, such as liquid-based cooling and portable cooling technologies, is also growing, which, in turn, is driving investments for further developments in the region.

In May 2023, the U.S. Department of Energy (DOE) announced USD 40 million in funding for 15 projects to develop high-performance, energy-efficient cooling solutions for data centers. The selected projects at universities, national labs, and businesses aim to reduce the energy necessary to cool data centers. These efforts will reduce the operational carbon footprint associated with cooling and powering this critical infrastructure and support President Biden's goals to reach net-zero carbon by 2050.

In May 2023, Nvidia received USD 5 million from the United States Department of Energy (DOE) to develop a data center cooling solution combining two-phase direct-to-chip and immersion cooling techniques using low-global warming potential refrigerants and per- and polyfluorinated alkyl substances that comply with environmental regulations.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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